

Applicants: Linda B. Buck and Richard Axel  
U.S. Serial No.: 09/771,209  
Filed: January 26, 2001  
Page 20

**REMARKS**

Claims 1-8, 13-24, 64 and 65 are pending and under examination in the subject application. Applicants add new claim 66, 67 and 68. Support for new claim 66 can be found in the specification on, *inter alia*, page 14, line 43 to page 15, line 8, page 40, lines 9-12 and Figures 4I, 5 and 6A(2)-6A(4). Support for new claim 67 can be found in the specification on, *inter alia*, page 16, line 21 to page 19, line 22, page 40, lines 9-12 and Figures 4I, 5 and 6A(2)-6A(4). Support for new claim 68 can be found in the specification on, *inter alia*, page 20, lines 28-37, page 40, lines 9-12 and Figures 4I, 5 and 6A(2)-6A(4). Additionally, applicants have canceled claim 20 without prejudice. Upon entry of this Amendment, claims 1-8, 13-19, 21-24 and 64-68 will be pending and under examination.

**Objection under 37 C.F.R. §1.75(c)**

The Examiner objected to claim 20 under 37 C.F.R. 1.75(c), as allegedly of improper dependent form for failing to further limit the subject matter of a previous claim.

37 C.F.R. 1.75(c) states that "[o]ne or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application" and "[c]laims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim."

Applicants: Linda B. Buck and Richard Axel  
U.S. Serial No.: 09/771,209  
Filed: January 26, 2001  
Page 21

Specifically, the Examiner asserted that applicants have allegedly failed to explain how a claim to a "purified odorant receptor protein" further limits a claim to "an isolated nucleic acid molecule" and includes all the limitations of the claim from which it depends.

Without conceding the correctness of the Examiner's rejection, applicants have canceled claim 20, and added new claims 66-68 corresponding thereto. Accordingly, applicants maintain that the Examiner's rejection of claim 20 has been overcome.

**Rejections Under 35 U.S.C. §112, First Paragraph**

The Examiner rejected claims 1-8, 13-24, 64 and 65 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter that is not described in the specification in such a way as to enable one skilled in the art to which it pertains to use the invention commensurate in scope with the claims.

Specifically, the Examiner alleges that applicants have failed to explain how one could use all the claimed nucleic acids, or proteins encoded thereby, in a manner that provides an immediate practical benefit to the public. Applicants again note that claim 20 has been canceled, making the rejection thereof moot.

In response to the rejection of the remaining claims, applicants respectfully traverse. 35 U.S.C. §112, first paragraph, requires that one skilled in the art be able to make and use the invention

Applicants: Linda B. Buck and Richard Axel  
U.S. Serial No.: 09/771,209  
Filed: January 26, 2001  
Page 22

without undue experimentation. A corollary of this requirement is that the invention must have at least one use.

Under 35 U.S.C. §101, "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title." Applicants maintain that they have discovered a new and useful invention and are thus entitled to a patent.

Applicants direct the Examiner's attention to §2164.01(c) of the M.P.E.P., which states, "when a compound or composition claim is not limited by a recited use, any enabled use that would reasonably correlate with the entire scope of that claim is sufficient to preclude rejection for nonenablement based on how to use" [emphasis added]. Here, Examiner has erroneously concluded that the nucleic acids of the subject invention, and the receptors encoded thereby, are entirely useless without knowledge of what ligands bind to each receptor. However, applicants maintain that even without knowing which specific ligands bind to the claimed receptors, these receptors still bear a use. For example, the receptors can be used to screen for the presence ligand-receptor pairings. Accordingly, applicants maintain that the pending claims satisfy the "how to use" requirement of 35 U.S.C. §112, first paragraph.

The Examiner further rejected claims 1-8, 13-24, 64 and 65 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way

Applicants: Linda B. Buck and Richard Axel  
U.S. Serial No.: 09/771,209  
Filed: January 26, 2001  
Page 23

as to enable one skilled in the art to which it pertains, or with which it is nearly connected, to make the invention commensurate in scope with the instant claims.

Specifically, the Examiner alleges that whereas the specification identifies some common structural features that may distinguish odorant receptors from other members of the G protein-coupled receptor family, one would not reasonably believe that these common features alone are sufficient to provide those functions which define an odorant receptor.

In response to the rejection of claim 20, applicants point out that this claim has been canceled, making the rejection thereof moot.

In response to the rejection of the remaining claims, applicants respectfully traverse the Examiner's rejection. Applicants maintain that the structural features which distinguish the claimed odorant receptor proteins from other proteins have been disclosed in the specification.

Furthermore, applicants assert that the inherent nature of odorant receptors makes it impractical, if not impossible, to set forth all nucleic acid sequences beyond the shared structural features disclosed in the specification. Applicants direct the Examiner's attention to page 47, line 7, to page 48, line 29, which discusses the size of the multigene family and the odorant receptor proteins encoded thereby and states, in part, that "olfactory perception probably employs an extremely large number of receptors each

Applicants: Linda B. Buck and Richard Axel  
U.S. Serial No.: 09/771,209  
Filed: January 26, 2001  
Page 24

capable of recognizing a small number of odorant ligands. Therefore, in order to detect the broadest range of odors possible, odorant receptor proteins exhibit great variety in their ligand binding regions, and thus variety in the nucleic acid sequences that encode them. Applicants maintain that the disclosure of the amino acid sequences that are common to this family of protein receptors is sufficient to enable one skilled in the art to make and use the claimed invention.

In view of the above remarks, applicants maintain that claims 1-8 and 13-19, 21-24, 64 and 65 satisfy the requirements of 35 U.S.C. §112, first paragraph.

**Rejection under 35 U.S.C. §102(b)**

The Examiner rejected claims 1-8, 13-24, 64 and 65 under 35 U.S.C. §102(b), as allegedly anticipated by Zhao et al.

Specifically, the Examiner asserts that applicants have lost their right to patent under 35 U.S.C. §102(b) because the Zhao et al. article was published in January 1998, more than one year prior to the date of filing of the instant application.

In order to sustain his §102(b) rejection, the Examiner asserts that, under 35 U.S.C. §120, the instant application is not entitled to the benefit of the priority date of the earlier application. The Examiner further states that the instant application can only receive the benefit of the earlier application if it meets the

Applicants: Linda B. Buck and Richard Axel  
U.S. Serial No.: 09/771,209  
Filed: January 26, 2001  
Page 25

requirements of 35 U.S.C. §112, first paragraph, with respect to the now-claimed invention.

In response to the rejection of claim 20, applicants again point out that this claim has been canceled, making the rejection thereof moot. In response to the rejection of claims 1-8, 13-19, 21-24, 64 and 65, applicants respectfully traverse.

In support of their traversal, applicants incorporate the relevant remarks made in the December 11, 2002 Amendment in Response to July 11, 2002 Office Action submitted in connection with the subject application. Accordingly, in light of the remarks made above, applicants maintain that claims 1-8, 13-19, 21-24, 64 and 65 are not anticipated by Zhao et al, as this reference is not prior art against these claims.

The Examiner also rejected claims 1-8, 13-18, 20, 64 and 65 under 35 U.S.C. §102(b) as allegedly anticipated by the Buck et al. publication.

Specifically, the Examiner asserts that applicants have lost their right to patent because the Buck et al. article was published on April 5, 1991, more than one year prior to the filing of the instant application.

In response to the rejection of claim 20, applicants again point out that this claim has been canceled, making the rejection thereof moot.

Applicants: Linda B. Buck and Richard Axel  
U.S. Serial No.: 09/771,209  
Filed: January 26, 2001  
Page 26

In response to the rejection of claims 1-8, 13-18, 64 and 65, applicants respectfully traverse. For the reasons set forth above, applicants maintain that claims 1-8, 13-18, 64 and 65 are not anticipated by Buck et al, as that reference is not prior art against these claims.

In view of the above remarks, applicants maintain that the rejected claims satisfy the requirements of 35 U.S.C. §102(b).

**Rejection under 35 U.S.C. §103(a)**

The Examiner also rejected claims 19 and 21 to 24 under 35 U.S.C. §103(a) as allegedly unpatentable over the Buck et al. reference published April 5, 1991.

Specifically, the Examiner asserted that it would be *prima facie* obvious to have incorporated a recombinant nucleic acid encoding I7 into an expression vector and host cell to facilitate the possible identification of ligands thereto.

As stated in the December 11, 2002 Amendment, applicants maintain that claims 19 and 21 to 24 are entitled to the benefit of the earlier priority date of U.S. Serial No. 07/681,880, filed April 5, 1991. As such, the Buck et al. publication is not prior art against the pending claims.

In view of these above remarks, applicants maintain that the rejected claims satisfy the requirements of 35 U.S.C. §103.

Applicants: Linda B. Buck and Richard Axel  
U.S. Serial No.: 09/771,209  
Filed: January 26, 2001  
Page 27

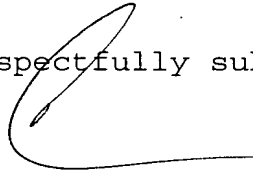
Summary

In view of the marks made herein, applicants maintain that the claims pending in this application are in condition for allowance. Accordingly, allowance is respectfully requested.

No fee, other than the enclosed \$172.00 fee for four additional independent claims, is deemed necessary in connection with the filing of this Amendment. However, if any additional fee is required, authorization is hereby given to charge the amount of such fee to Deposit Account No. 03-3125.

If a telephone interview would be of assistance in advancing the prosecution of the subject application, applicants' undersigned attorneys invite the Examiner to telephone them at the number provided below.

Respectfully submitted,



I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to:

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